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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
1998 Biennial Regulatory Review --	)	
	)	ET Docket No. 98-42
Amendment of Part 18 of the	)	
Commission's Rules to Update	)	
Regulations For RF Lighting Devices	)	

To: The Commission

REPLY COMMENTS
OF
METRICOM, INC.

Metricom, Inc. ("Metricom"), by its attorneys, pursuant to § 1.415 of the Commission's rules, hereby submits these Reply Comments in response to Comments filed in the above-referenced proceeding concerning amendment of Part 18 of the Commission's rules as they relate to RF lighting devices.[1] In its Comments, among other things, Metricom urged the Commission to consider the extensive use of the 2400 MHz band by Part 15 operators and to preserve the delicate balance it has established for sharing the 2400 MHz band by specifying in-band emission limits for RF lighting devices.

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1. Pursuant to the Commission's Public Notice released August 4, 1998, DA 98-1515, the time for filing these Reply Comments was extended to August 24, 1998.

1. Metricom agrees with those commenters who urged the Commission to adopt in-band emission limits for RF lighting devices as a means of avoiding harmful interference to Part 15 operations.[2] Metricom also supports the National Association of Broadcasters' ("NAB") recommendation that the FCC adopt a single emission level for RF lighting devices used in both residential and non-residential environments rather than the two-tiered approach proposed by the Commission.[3]

I. THE COMMISSION HAS AUTHORITY TO MODIFY PART 18 OF ITS RULES TO BENEFIT THE PUBLIC INTEREST

2. Several commenters alleged that if Part 15 operators choose to operate in the 2400 MHz band, they must accept harmful interference from RF lighting devices because Section 15.5(b) of the Commission's rules provides that Part 15 users must accept interference from other authorized users in the band.[4] Specifically, Fusion Lighting contended that "non-ISM services . . . must accept harmful interference from ISM devices which operate in the 2400-2500 MHz ISM band."[5] Likewise, the International Microwave Power Institute ("IMPI") asserted that "those devices that willfully choose to operate within the long-established ISM

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2. *See, e.g.,* Comments of the Part 15 Coalition, p. 4; Comments of 3Com Corporation, p. 5; Comments of Aironet Wireless Communications, Inc., p. 2; Comments of Symbol Technologies, Inc., p. 5.

3. *See* Comments of the National Ass'n of Broadcasters, p. 2.

4. *See, e.g.,* Comments of Fusion Lighting, pp. 10-11; and Comments of the International Microwave Power Institute, p. 3.

5. Comments of Fusion Lighting, pp. 10-11 (emphasis in original).

frequencies do so with a long standing knowledge that ISM interference must be accepted."[6]

3. Fusion Lighting and IMPI fail to recognize that while Section 15.5(b) of the Rules requires Part 15 operations to accept interference from other authorized users in the band, the Commission certainly has authority to adopt rules modifying Part 18 in order to minimize such interference with a view towards enabling all users of the band to more effectively share the band.[7] Such modification has no impact on Section 15.5(b). If harmful interference occurs to Part 15 users despite modifications to Part 18 rules designed to prevent it, then, pursuant to Section 15.5(b) of the Commission's rules, Part 15 operations will be required to accept the interference, even if that means discontinuing operations.

4. The Commission must continue its policy of ensuring a balance that enables significant numbers of Part 15 users to continue operations in the 2400 MHz band.[8]

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6. Comments of the International Microwave Power Institute, p. 3.

7. Less than one year ago, the Commission recognized that Section 15.5(b) does not preclude it from adopting rules that accommodate Part 15 operations and other entities seeking to operate in the same band without altering the status of Part 15 devices in the hierarchy of users. *See In re* Amendment of Part 90 of the Commission's Rules to Adopt Regulations for Automatic Vehicle Monitoring Systems, *Memorandum Opinion and Order*, 12 FCC Rcd 13942 (1997).

8. The Commission recently evidenced its concurrence with this reasoning when, in the NPRM proposing rules to govern Intelligent Transportation Services, the Commission found that Part 15 devices were secondary but, nonetheless, in the public interest and requested comment on how best to accommodate Part 15 devices in the band. *See In re* Amendment of Parts 2 and 90 of the Commission's Rules to Allocate the 5.850-5.925 GHz Band to the Mobile Service for Dedicated Short Range Communications of Intelligent Transportation Services, FCC 98-119, released June 11, 1998, at ¶ 21.

Contrary to what Fusion and IMPI suggest, the Commission can modify Part 18 of the rules to provide for RF lighting device operations in the 2400 MHz band and, at the same time provide an environment that will permit Part 15 operations to continue. The in-band emission limits on RF lighting devices, as urged by Metricom and several other commenters, can be easily complied with through the use of RF filters. RF lighting proponents oppose using filters, not because they believe filters would damage the effectiveness of RF lighting devices, but rather, because filters would add "approximately 15 percent to the cost of" RF lighting devices.[9] While Metricom believes this estimate is high, even this slight increase in price cannot outweigh the critical importance of maintaining Part 15 operations in the band, estimated to be valued at approximately $2.5 billion by the end of 1998.[10]

5. Furthermore, despite what Fusion and IMPI would have the Commission believe, maintaining a balance by means of imposing technical limitations on RF lighting devices does not alter the secondary status of Part 15 operations. Rather, such a solution would be consistent with both the Commission's role of ensuring that the radio spectrum is used efficiently and the Commission's established policy of encouraging the development and deployment of Part 15 operations.[11]

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9. *See In re* Amendment of Part 18 of the Commission's Rules to Update Regulations for RF Lighting Devices, *Notice of Proposed Rulemaking*, FCC 98-53, released April 9, 1998, at ¶ 9.

10. *See* Metricom Comments at ¶ 5.

11. *See First Report and Order Allocation of Spectrum Below 5 GHz Transferred From Federal Government Use*, 10 FCC Rcd. 4769 (1995) at ¶ 32 ("Considering the universal benefits provided by Part 15 equipment, the potential growth for new technologies in this area ... we (continued...)

6. Fusion and IMPI would have the Commission ignore precedent and the concerns raised by several Part 15 operators in this proceeding based solely on the text of Section 15.5(b). This myopic reasoning neglects the fact that courts have held that the Administrative Procedure Act requires the Commission to engage in reasoned decision making and to address all of the issues raised in comments filed in a rulemaking proceeding.[12] Accordingly, as a matter of reasoned decision making pursuant to the Administrative Procedure Act, if the Commission refuses to adopt in-band emission limits for RF lighting devices in the 2400-2500 MHz band without regard to the impact these devices could have on Part 15 operations, the Commission must, at least, indicate that it is not concerned with the impact RF lighting devices will have on Part 15 operations.[13] The Commission must clearly articulate its rationale for the decision reached, which, given the Commission's creation and encouragement of the Part 15 industry,

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11. (...continued)
find that the public is best served by providing for the continued availability of this band for Part 15 equipment.")

12. *See, e.g., Greater Boston Television Corp. v. FCC*, 444 F.2d 841, 852 (D.C. Cir. 1970).

13. Metricom is fully cognizant of the secondary status of Part 15 operations under the Commission's rules. Metricom also recognizes that the Commission has discretion and authority to allocate spectrum. However, manufacturers and consumers have a right to expect that any change in the rules affecting Part 15 operations will be based upon reasoned decision making, especially in light of the Commission's unequivocal position supporting Part 15 operations in the 2400 MHz band. *See First Report and Order, Allocation of Spectrum below 5 GHz*, 10 FCC Rcd 4769. In the NPRM in the instant proceeding, the Commission failed to even consider the potential impact RF lighting devices will have on Part 15 operations and focused only on operations outside of the 2400 MHz band. *See* Comments of Metricom, Inc., p. 5.

will require more than a simple recitation that Part 15 devices must accept interference from other users in the band.[14]

II. THE COMMISSION SHOULD ADOPT UNIFORM EMISSION LIMITS FOR ALL RF LIGHTING DEVICES

7. NAB pointed out in its Comments that the Commission's proposal to adopt separate emission limits for RF lighting devices intended for residential and non-residential uses fails on two counts: (1) the Commission cannot ensure that RF lighting devices approved for non-residential use are not used in residential locations; and (2) the higher emission limit for non-residential use incorrectly assumes that RF lighting devices will be located farther away from equipment that may be subject to interference from RF lighting devices than in a residential environment.[15]

8. Metricom supports the NAB's position. As the Part 15 Coalition pointed out in its Comments, RF lighting devices located in outdoor environments will likely be used extensively, possibly for as much as twenty-four hours per day.[16] Therefore, any low power, unlicensed RF devices located in the vicinity of outdoor RF lighting devices would likely be subject to constant harmful interference. To prevent this, Metricom urges the Commission to adopt a single emission limit of 50 microvolts per meter for all RF lighting devices.

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14. *See* 5 U.S.C. § 553(c) (1998).

15. Comments of NAB, p. 2.

16. *See* Comments of the Part 15 Coalition, p. 4.

9. The Commission has recognized the importance of emission limits in other proceedings.[17] These limits are no less important in this proceeding and they would, at minimal cost, significantly benefit other users of the 2400 MHz band by lessening the likelihood that RF lighting devices would cause harmful interference. Accordingly, the Commission should adopt only one in-band and out-of-band emission limit for RF lighting devices.

III. CONCLUSION

WHEREFORE, the Commission should take action in this proceeding adopting in-band, as well as out of band, radiation limits for RF lighting devices consistent with the views expressed in Metricom's Comments and Reply Comments.

Respectfully submitted,

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17. *See* Intelligent Transportation Service NPRM, at ¶ 32 ("We agree that it is important to limit the amount of unwanted emissions, both those occurring outside of the ... spectrum band and those emanating from one channel to the next within the ... band.") (emphasis added).